Installation Note for Isocratic-to-Quaternary Pump Upgrade Kit G1352A

In this note we describe how to install the isocratic-to-quaternary pump upgrade kit into an Agilent 1100 Series isocratic pump.

General Information

For low pressure mixing pumps, like the Agilent 1100 Series quaternary pump, degassing is a must. Therefore an Agilent 1100 Series vacuum degasser must be added to the upgraded pump.

Delivery Checklist

Make sure all parts and materials have been delivered with the upgrade kit. The delivery checklist is shown in Table 1. Please report missing or damaged parts to your local Agilent sales and service office.

Table 1 **Isocratic to Quaternary Pump Upgrade Kit**

Description	Quantity	Part Number
Multichannel gradient valve (MCGV)	1	G1311-67701
Valve cover	1	G1311-44101
Connecting tube	1	G1311-67304
Cable assembly, MCGV	1	G1311-61600
Locking element	2	1520-0401
Screw M4 50 mm lg	2	0515-0906
Bottle	3	9301-1421
Drawing tube	3	G1311-60003
Reference Manual, Agilent 1100 Series quaternary pump	1	G1311-90003

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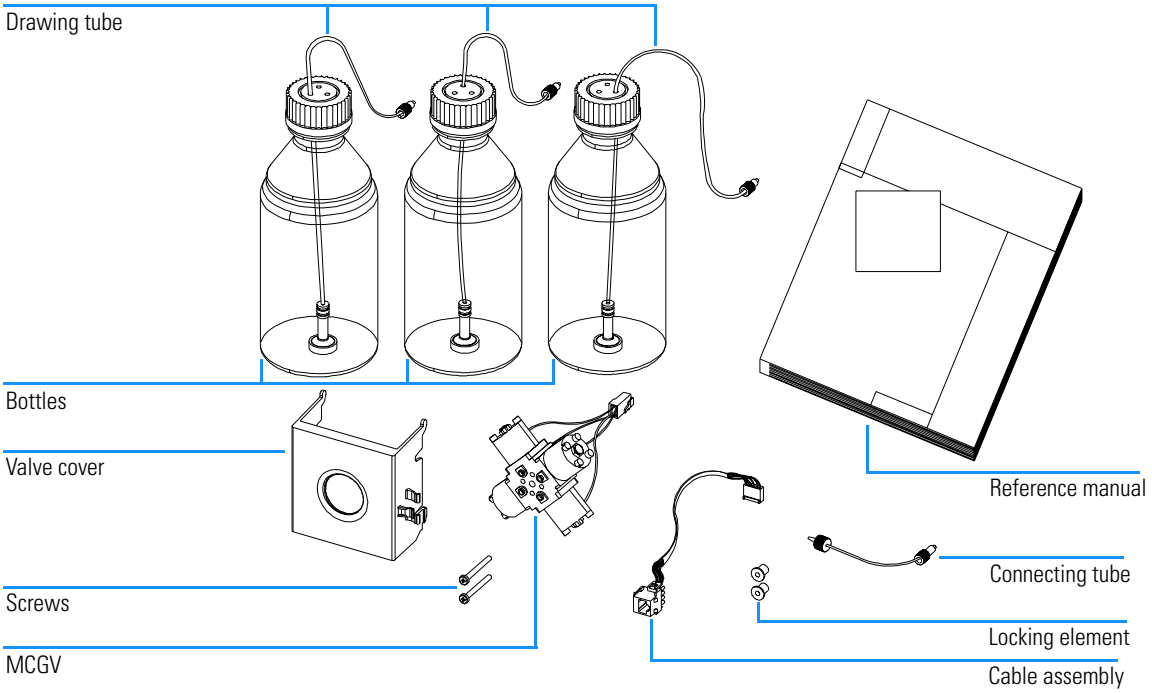
Figure 1 **Isocratic-to-Quaternary Pump Upgrade Kit**



Safety Information

WARNING

The following procedures require opening the main cover of the isocratic pump. Always ensure the isocratic pump is disconnected from the line power when the main cover is removed. The security lever at the power input socket prevents that the pump cover is taken off when line power is still connected.

To disconnect the isocratic pump from line, unplug the power cord. The power supply still uses some power, even if the switch on the front panel is turned off.

When opening capillary or tube fittings solvents may leak out. Please observe appropriate safety procedures (for example, goggles, safety gloves and protective clothing) as described in the material handling and safety data sheet supplied by the solvent vendor, especially when toxic or hazardous solvents are used.

CAUTION

Internal components may be sensitive to electrostatic discharge (ESD). Always use an ESD kit (shipped with the standard accessory kit of your pump) when handling internal parts.

NOTE

The electronics of the isocratic pump will not allow operation when the top cover and the top foam are removed. A safety light switch on the main board will inhibit the operation of the isocratic pump. Always operate the isocratic pump with the top foam and top covers in place.

Installing the Isocratic-to-Quaternary Pump Upgrade Kit

Tools required	Screwdriver Pozidriv #1

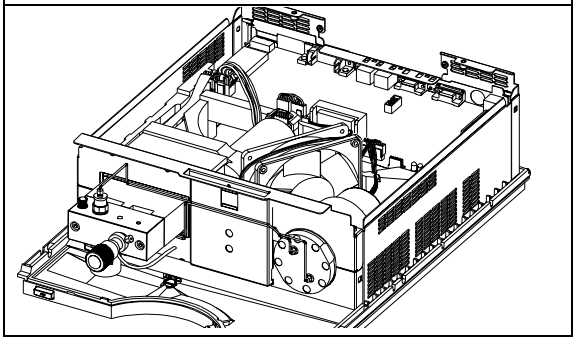
Stage 1: Installing the MCGV Cable Assembly

This stage describes how to add the cable for the multichannel gradient valve (MCGV) to the pump. You must remove the isocratic pump from the stack in order to open the main cover. The following procedure mainly concentrates on the installation of the new parts and gives only basic information about preparation steps, like top cover removal, and so on. Refer to the chapter "Repairing Your Pump" in your *Reference Manual* for a detailed description of this procedure.

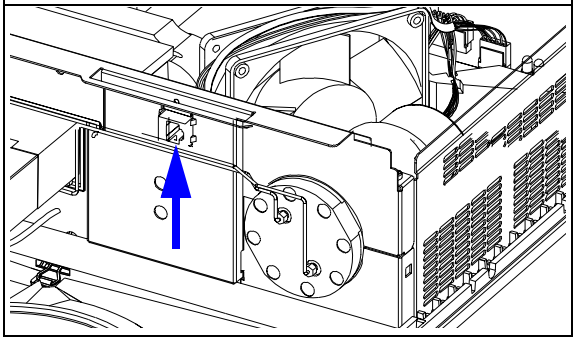
Before beginning this procedure:

1. Switch off isocratic pump at the main power switch.
2. Disconnect the solvent inlet tube and the adapter at the active inlet valve. Beware of leaking solvents due to hydrostatic flow.
3. Remove the solvent cabinet from the isocratic pump.

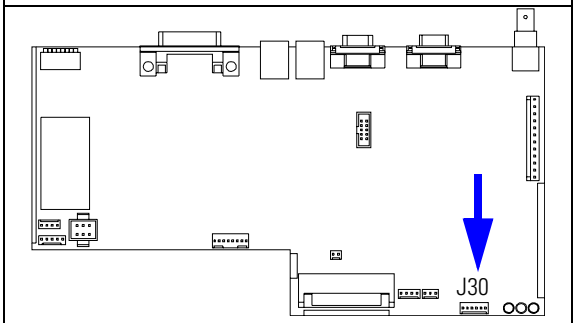
1 Remove the front cover, the top cover, the metal plate and the top foam.



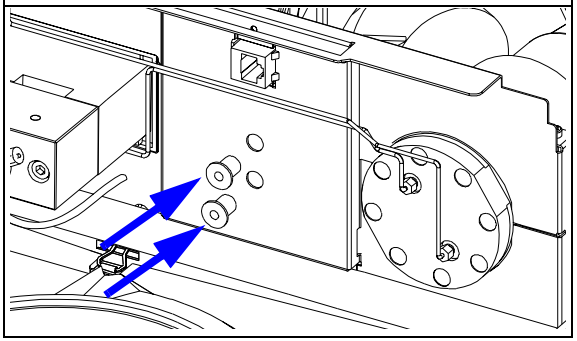
2 Insert the MCGV cable connector into the connector recess and clip into position (may require a small flat head screwdriver).



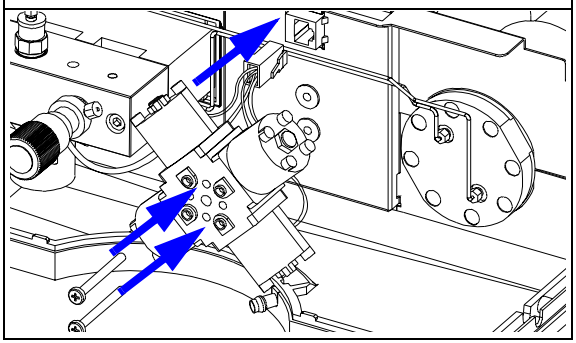
3 Connect the board connector of the cable to J30 of the main board. Position the cable on the upper side of the fan.



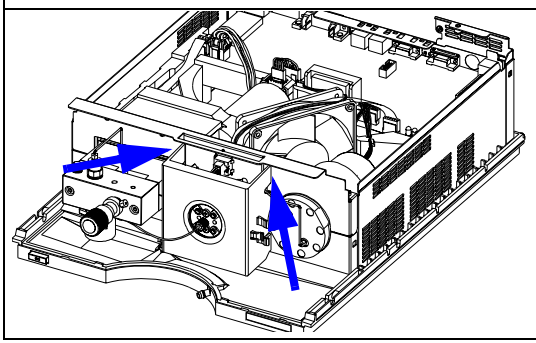
4 Press the two locking elements into the position holes of the MCGV.



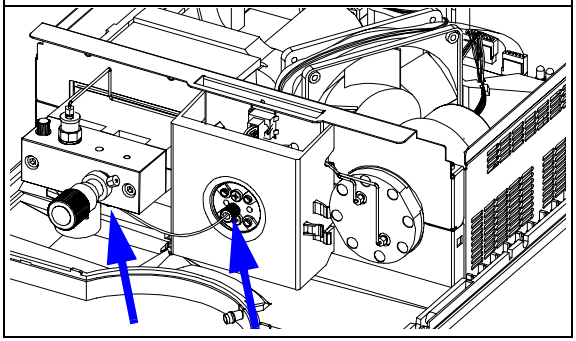
5 Place the MCGV into position. Make sure that the valve is positioned as indicated on the MCGV cover. Tighten the two holding screws and connect the cable to its connector.



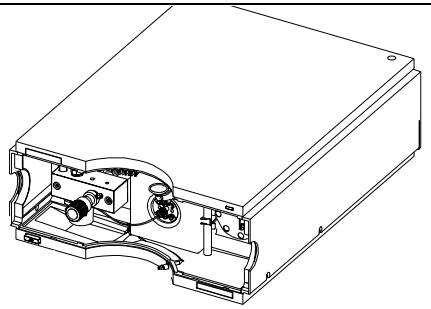
6 Insert the upper clips of the MCGV cover into the cover slits and press it down until clipped in its position.



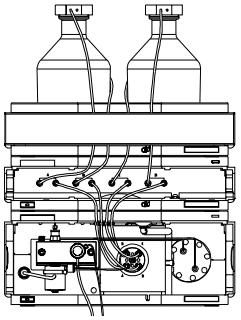
7 Install the connection tube between the active inlet valve and the middle position of the MCGV.



8 Replace top foam, metal cover and top cover. Fix the waste tube to the clips on the right side of the MCGV cover.



9 Place the pump back into the stack, place vacuum degasser and solvent cabinet back in place.



Stage 2: Configuration of the Controller

Turn the upgraded isocratic pump on. The pump status indicator should turn red. This is a normal behavior of the pump as the firmware requires a new TYPE command for the upgraded (quaternary) pump.

Entering the Type Command Using the Control Module

1 Go to the System screen, then press Tests (F3).

2 Using the up and down keys, make sure that the isocratic pump is highlighted and press Enter. The Tests screen for the pump is now be displayed.

3 While in the Tests screen, press m.m (m dot m). From the box now displayed, select the Command line, and press Enter.

4 In the box labeled Instr, enter the command TYPE G1311A.

5 Letters and numbers are created using the up and down keys. There must be a space between the word TYPE and the letter G.

NOTE It is important to enter the TYPE command correctly. An incorrect TYPE command may cause the module to turn on in its resident mode. In such a case, reenter the TYPE command correctly.

6 When the command is entered, press Enter to highlight the complete command.

7 Press the Execute (F8) key. Below the box, a reply line should then say: Reply RA 0000 TYPE “G1311A”.

8 Turn the module off, then on again. Turn on should be normal. In the Records screen, the product# column should indicate the quaternary pump. If a ChemStation is also connected, reboot it now.

9 Following the procedure “Installing the Quaternary Pump” in the *Reference Manual* set up the pump for operation.

Entering the Type Command Using the ChemStation

The TYPE is entered by typing a specific command into the command line at the bottom of the main user interface screen.

1 To enter the TYPE for a specific module, type the following command into the command line:

print sendmodule$(lpmp, “TYPE G1311A”)

NOTE It is important to enter the TYPE command correctly. An incorrect type command may cause the module to turn on in its resident mode. In such a case, reenter the TYPE command correctly.

2 The reply line will respond with RA 0000 Type “G1311A”.

3 Turn the pump off, then on again. Then, reboot the ChemStation. Boot up, and subsequent control of the system, should be normal.

4 The TYPE of a module can also be seen by typing the following command into the command line:

print sendmodule$(lpmp, “TYPE?”)
The reply line will give the module TYPE.

Following the procedure *“Installing the Quaternary Pump”* in the *Reference Manual”* set up the pump for operation.

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